

ACTION ITEMS MTCC Phase II
Last modified AS
13.10.06

1. General site operations
<ul style="list-style-type: none"> • Accessible and restricted areas plan for Phase II. Done • Guards on duty mandatory for keeping track of people during B operation Done • Improve self sufficiency at Point 5.
2. Infrastructure, cooling, shielding, network
<ul style="list-style-type: none"> • EB LV crates need to be fed in parallel, not in series. • New cooling manifolds have to be designed. • Eletta Flowmeters – calibrate for flow Done • Shielding is necessary for network star point cabinets. Done • Improve RPC HV PS supply shielding Done
3. Closing and Opening CMS heavy elements
<ul style="list-style-type: none"> • Survey and calculate remaining shimming & adjustment for UXC Done • Need careful monitoring of YE1 tolerances for closures and openings, and procedure, weld in the inner ring dowel pins and understand the effect on the proximity closing jacks. Done • Establish procedures for ready to close; ready for field, ready to open • Dowel pins to be welded Done
4. Magnet operation
<ul style="list-style-type: none"> • Check magnet DCCT on dummy load, shielding and DCCT operation needs review • Check sensitivity of the fringe field on the heads for the DCCTs underway; to check the readout card. • Check control sequence of cryogenics during the slow discharge. • Add simple and reliable source of current measurement
5. Field Mapping, Fringe Field
<ul style="list-style-type: none"> • Maximum field in the electronic racks is around 180 mT at the crack between YE1 and YB0 • Steel rack doors in UXC should be replaced by aluminium • estimate of shielding effect of pillar wall to be made, resultant field in USC near pillar wall may be larger than anticipated. – who is doing this?
6. DSS Detector Safety System
<ul style="list-style-type: none"> • Dependence of the DSS on the network

<ul style="list-style-type: none"> • Define a procedure of modification to the alarm action matrix. • Repeat of the magnet MCS screen • DSS screen to be more intuitive • Written documentation of the DSS alarms has to be improved. Partially Done
7. Trigger
<ul style="list-style-type: none"> • integration of HCAL m.i.p. triggers via the RCT, • integration test of (GMT + GT) • test "muon overlap" triggers of DT and CSC systems at the Track-Finder level • Trigger Supervisor software (TS) to configure and control the trigger systems, and • Test of the TTC resync procedure.
8. Central DAQ
<ul style="list-style-type: none"> • More online running in Filter (raw2digi, reco and DQM) ongoing • Address delays in making event files available offline and remote. ongoing • Switching from local – global; out-of-sync • Need well defined ‘ground’ state • Need on call experts (H/W + S/W) available from subdet and central DAQ. • DAQ shifts scheme to have a person taking whole week in a row is good for continuity • Global Trigger necessary for phase II • Writing data to disk to be reviewed; there are occasional conflicts between writing data and copying to CASTOR;
9. DCS
<ul style="list-style-type: none"> • CMF like functionality is indispensable for setting up big clusters of PCs. • Need a DCS overview panel well visible in the counting room. • Implement PVSSII access control • Alarm handling and visualization • Implement automatic notification (email, SMS, etc.) service • Move DCS PCs to CMS private network - (postponed)
10. DQM
<ul style="list-style-type: none"> • In sync with the CMSSW version used by global DAQ, but needed “patches” Done • On-line DQM in the Filter Farm to be tested • DQM running on-line in the FF should be tried out. • Detectors must comply with general rules that will allow to keep taking data even if there are problems in their system • Tests should be done with multiple clients (in number and type, GUI and Web Interface) around the world connected at the same time. • DQM and EVD should run on a dedicated or quasi-dedicated PC • DT to be included in global DQM application • Systematically store the DQM snapshots (root files). • Communication in both directions o2o to be established
11. Remote Analysis Capability
At CERN Meyrin
<ul style="list-style-type: none"> • slow data transfer out of SX5,

At ROC
<ul style="list-style-type: none"> • Data transfer was absolutely critical; improved communication is desirable.
<ul style="list-style-type: none"> • Currently the transfer mechanism between Tier 0 and Tier 1 does not allow the assignment of priorities. This could cause a conflict between MTCC phase II and CSA data transfer.
<ul style="list-style-type: none"> • New root version was introduced in offline CMSSW version 0_8_0_pre4, it caused a backward incompatibility with the 0_7_0.
<ul style="list-style-type: none"> • For 'CPT-shifters' at the Meyrin site, the absence of a nice place to sit Done – 3rd Floor b40
<ul style="list-style-type: none"> • In general the CMSSW software (unpacking, DQM, reconstruction, event display) was found to be impossible to use 'out-of-the-box'. A lot of expert help was needed to get subsystems to work.
<ul style="list-style-type: none"> • Easy access/links to the correct database (external files) from the analysis programs needed to do online or offline monitoring correctly.
13. Sub systems:
a. HCAL
<ul style="list-style-type: none"> • Need to optimize CSC triggers to better point towards interaction point (HE) • Working on code to select events with DT or CSC tracks pointing to HCAL • LED data study for alignment of HO HPDs • No central DCS system running on HCAL, need to install for Phase2 • DQM for HCAL running on-line, need to fine-tune the plots • Measure scintillator brightening. • RCT and DAQ issues • Source management procedure
b. MUONS
i. Alignment
<ul style="list-style-type: none"> • the alignment components stick out – protection under study • Position recording devices like BCAMs need to be investigated for closing / Opening Procedures which need to be well established and warnings be issued if tolerances are not being respected. • The non- recovery of initial Link Disk position after magnet was off investigated. • Laser adjustments are the major concern. Pre-adjustment on YE1 of the AlignRing and LinkDisk looks mandatory (with access to both sides of YE1). And needs good verticalization of the disk and SU measurements. Procedure? • Endcap SLMs lines shims on the sensors compensate well the yoke bending but not the laser bending with field on. Laser lines can not complete the full ray path, for B on and off, as foreseen. Is something to be done?
ii. DT
<ul style="list-style-type: none"> • Detailed investigation of the DT-CSC relative synchronisation in the overlap region. • Interplay with databases (condition, configuration DB) to retrieve/store configuration settings and MCs conditions. • Exercise DCS. • DQM integration <ul style="list-style-type: none"> • Lorentz angle studies

The following goals have been set:
iii. CSC
– HV scan to verify LCT efficiency and Gas Gains
– HV scan to verify CLCT efficiency
– trigger studies (running various trigger primitives and trackfinder configurations)
– Long continuous runs (>1M events)
iv. RPC
• Install Link board system in Sect 11 W+2 Done
• Gas equalization on W+2 W+1 Done
• Dedicated run with DT for efficiency, timing studies, requiring Global DAQ.
• Complete trigger chain:
• LB → TB → HSB → FSB → GMT
• Normal DAQ: 4 RMB mezzanines + DCC
• DCC should allow the RPC to run closer to the final configuration